VII. Claims

What is claimed is:

1. An identification code reader for reading an identification code from a mailpiece, comprising:

a reader unit, which further comprises:

a reader logic unit;

a light filter unit; and

a signal converter for converting an output of the light filter unit to an electrical signal;

a reader head assembly, which further comprises:

an infrared light source;

a lens focusing output of a light source on the mailpiece; and

an infrared receiver receiving light through the lens reflected by the mailpiece; and

an optical cable connecting the reader head assembly to the reader unit.

2. The identification code reader of claim 1, further comprising:

a mounting unit for mounting the identification code reader on a mail sorter.

3. The identification code reader of claim 1, wherein the signal converter converts an analog signal from the light filter unit into a digital signal.

4.   The identification code reader of claim 1, wherein the reader unit further comprises a synchronous serial port.

5.   The identification code reader of claim 4, wherein the synchronous serial port uses transistor transistor logic.

6.   The identification code reader of claim 4, wherein the synchronous serial port uses differential logic.

7.   The identification code reader of claim 1, wherein the reader head assembly further comprises an input device receiving operator-entered function selections.

8.   The identification code reader of claim 1, wherein the reader unit further comprises a set of push buttons used by an operator to select functions.

9.   The identification code reader of claim 1, wherein the reader head assembly further comprises one or more light emitting diodes.

10.   The identification code reader of claim 1, further comprising a power supply.

11.   The identification code reader of claim 1, wherein the reader unit further comprises the light source.

12.   The identification code reader of claim 1, wherein the reader head assembly further comprises the light source.

13.   The identification code reader of claim 1, wherein the optical cable is a fiber optic bundle.

14.   The identification code reader of claim 1, wherein the reader unit further comprises one or more light emitting diodes.

15.   A method of reading an identification code from a mailpiece, comprising the steps of:

generating a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

sending the signal from the reader head assembly to a microprocessor in a reader unit over a signal cable;

illuminating a light source to scan an identification code from the mailpiece;

focusing the scanned identification code at a fiber bundle;

transmitting the scanned identification code via the fiber bundle to a light filter unit;

sending an output signal from the light filter unit to a signal converter that converts the output signal to a digital signal;

transmitting the digital signal from the signal converter to the microprocessor;

processing the digital signal at the microprocessor to obtain the identification code; and

outputting the identification code from the microprocessor to an output port.

16.   The method of claim 15, wherein the signal is a light barrier signal.

17.   The method of claim 15, wherein the output port is a synchronous serial port.

18.   The method of claim 17, wherein the synchronous serial port uses transistor transistor logic.

19.   The method of claim 17, wherein the synchronous serial port uses differential logic.

20.   The method of claim 15, wherein the microprocessor is a reader logic unit.

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21.   The method of claim 15, wherein the signal converter is an A/D converter.

22.   The method of claim 15, wherein the focusing step further comprises the substep

of:

focusing the scanned identification code through a lens.

23.   The method of claim 15, further comprising the step of:

displaying monitoring data on the reader head assembly.

24.   The method of claim 23, further comprising the step of:

displaying monitoring data on one or more light emitting diodes on the reader

head assembly.

25.   The method of claim 15, further comprising the step of:

receiving instructions from an operator via a set of push buttons on the reader

unit.

26.   The method of claim 15, further comprising the step of:

displaying monitoring data on one or more light emitting diodes on the reader

unit.

27.   The method of claim 15, further comprising the step of:

receiving instructions from an operator via a set of push buttons on the reader

head assembly.

28.   The method of claim 15, wherein the light source is part of the reader head

assembly.

29.   The method of claim 15, wherein the light source is part of the reader unit.

30.   The method of claim 15, wherein the microprocessor is a digital signal processor.

31.   A system for reading an identification code from a mailpiece, comprising:

a generating component configure to generate a signal in response to the

mailpiece being placed in front of an infrared receiver at a reader head assembly;

a response signal sending component configure to send the signal from the

reader head assembly to a microprocessor in a reader unit over a signal cable;

an illuminating component configure to illuminate a light source to scan an

identification code from the mailpiece;

a scanned identification code focusing component configure to focus the

scanned identification code at a fiber bundle;

a scanned identification code transmitting component configure to transmit the

scanned identification code via the fiber bundle to a light filter unit;

an output signal sending component configure to send an output signal from the light filter unit to a signal converter that converts the output signal to a digital signal;

a digital signal transmitting component configure to transmit the digital signal from the signal converter to the microprocessor;

a processing component configure to process the digital signal at the microprocessor to obtain the identification code; and

an outputting component configure to output the identification code from the microprocessor to an output port.

32.   The system of claim 31, wherein the signal is a light barrier signal.

33.   The system of claim 31, wherein the output port is a synchronous serial port.

34.   The system of claim 33, wherein the synchronous serial port uses transistor transistor logic.

35.   The system of claim 33, wherein the synchronous serial port uses differential logic.

36.   The system of claim 31, wherein the microprocessor is a reader logic unit.

37.   The system of claim 31, wherein the signal converter is an A/D converter.

38.   The system of claim 31, wherein the scanned identification code focusing component further comprises:

a lens focusing component configured to focus the scanned identification code through a lens.

39.   The system of claim 31, further comprising:

a reader head assembly displaying component configured to display monitoring data on the reader head assembly.

40.   The system of claim 39, further comprising:

a light emitting diode displaying component configured to display monitoring data on one or more light emitting diodes on the reader head assembly.

41.   The system of claim 31, further comprising:

a reader head receiving component configured to receive instructions from an operator via a set of push buttons on the reader head assembly.

42.   The system of claim 31, further comprising:

a reader unit displaying component configured to monitoring data on one or more light emitting diodes on the reader unit.

43. The system of claim 31, further comprising:

a reader unit receiving component configured to receive instructions from an operator via a set of push buttons on the reader unit.

44. The system of claim 31, wherein the light source is part of the reader head assembly.

45. The system of claim 31, wherein the light source is part of the reader unit.

46. The system of claim 31, wherein the microprocessor is a digital signal processor.

47. A system for reading an identification code from a mailpiece, comprising:

means for generating a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

means for sending the signal from the reader head assembly to a microprocessor in a reader unit over a signal cable;

means for illuminating a light source to scan an identification code from the mailpiece;

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means for focusing the scanned identification code at a fiber bundle;

means for transmitting the scanned identification code via the fiber bundle to a light filter unit;

means for sending an output signal from the light filter unit to a signal converter that converts the output signal to a digital signal;

means for transmitting the digital signal from the signal converter to the microprocessor;

means for processing the digital signal at the microprocessor to obtain the identification code; and

means for outputting the identification code from the microprocessor to an output port.

48.   A computer usable medium having computer readable code embodied therein for reading an identification code from a mailpiece, the computer readable code comprising:

a generating module configure to generate a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

a response signal sending module configure to send the signal from the reader head assembly to a microprocessor in a reader unit over a signal cable;

an illuminating module configure to illuminate a light source to scan an identification code from the mailpiece;

a scanned identification code focusing module configure to focus the scanned identification code at a fiber bundle;

a scanned identification code transmitting module configure to transmit the scanned identification code via the fiber bundle to a light filter unit;

an output signal sending module configure to send an output signal from the light filter unit to a signal converter that converts the output signal to a digital signal;

a digital signal transmitting module configure to transmit the digital signal from the signal converter to the microprocessor;

a processing module configure to process the digital signal at the microprocessor to obtain the identification code; and

an outputting module configure to output the identification code from the microprocessor to an output port.

49.   A method of reading an identification code from a mailpiece, wherein the identification code is printed in flourescent ink, comprising the steps of:

generating a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

sending the signal from the reader head assembly to a microprocessor in a reader unit over an optical cable;

illuminating a light source to scan an identification code from the mailpiece;

focusing the scanned identification code at a fiber bundle including a plurality of bundle sections;

transmitting the scanned identification code via the fiber bundle to a set of photo sensors at a light filter unit, wherein the transmitting step further comprises the substeps of:

filtering a first fiber bundle section through a first light filter in a first photo sensor at the light filter unit;

filtering a second fiber bundle section through a second light filter in a second photo sensor at the light filter unit; and

filtering a third fiber bundle section through a third light filter in a third photo sensor at the light filter unit;

multiplexing an output signal from the set of photo sensors to a signal converter that converts the output signal to a digital signal;

transmitting the digital signal from the signal converter to the microprocessor;

processing the digital signal at the microprocessor to obtain the identification code; and

outputting the identification code from the microprocessor to an output port.

50.   The method of claim 49, wherein the first light filter, the second light filter, and the third light filter each respond to a different light frequency.

51.   The method of claim 49, wherein the signal is a light barrier signal.

52.   The method of claim 49, wherein the output port is a synchronous serial port.

53.   The method of claim 52, wherein the synchronous serial port uses transistor transistor logic.

54.   The method of claim 52, wherein the synchronous serial port uses differential logic.

55.   The method of claim 49, wherein the microprocessor is a reader logic unit.

56.   The method of claim 49, wherein the converter is an A/D converter.

57.   The method of claim 49, wherein the focusing step further comprises the substep of:

focusing the scanned identification code through a lens.

58.   The method of claim 49, further comprising the step of:

displaying monitoring data on one or more light emitting diodes on the reader head assembly.

59.	The method of claim 49, further comprising the step of:

receiving instructions from an operator via a set of push buttons on the reader

unit.

60.	The method of claim 49, further comprising the step of:

displaying monitoring data on one or more light emitting diodes on the reader

unit.

61.	The method of claim 49, further comprising the step of:

receiving instructions from an operator via a set of push buttons on the reader

unit.

62.	The method of claim 49, wherein the output port comprises a plurality of ports.

63.	The method of claim 49, wherein the light source is part of the reader head

assembly.

64.	The method of claim 49, wherein the light source is part of the reader unit.

65.	The method of claim 49, wherein the microprocessor is a digital signal processor.

66.   A system for reading an identification code from a mailpiece, wherein the identification code is printed in flourescent ink, comprising:

a generating component configured to generate a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

a signal sending component configured to send the signal from the reader head assembly to a microprocessor in a reader unit over an optical cable;

an illuminating component configured to illuminate a light source to scan an identification code from the mailpiece;

a scanned identification code focusing component configured to focus the scanned identification code at a fiber bundle including a plurality of bundle sections;

a scanned identification code transmitting component configured to transmit the scanned identification code via the fiber bundle to a set of photo sensors at a light filter unit, wherein the transmitting component further comprises:

a first filtering component configured to filter a first fiber bundle section through a first light filter in a first photo sensor at the light filter unit;

a second filtering component configured to filter a second fiber bundle section through a second light filter in a second photo sensor at the light filter unit; and

a third filtering component configured to filter a third fiber bundle section through a third light filter in a third photo sensor at the light filter unit;

a multiplexing component configured to multiplex an output signal from the set of photo sensors to a signal converter that converts the output signal to a digital signal;

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a digital signal transmitting component configured to transmit the digital signal from the signal converter to the microprocessor;

a processing component configured to process the digital signal at the microprocessor to obtain the identification code; and

an outputting component configured to output the identification code from the microprocessor to an output port.

67.   The system of claim 66, wherein the first light filter, the second light filter, and the third light filter each respond to a different light frequency.

68.   The system of claim 66, wherein the signal is a light barrier signal.

69.   The system of claim 66, wherein the output port is a synchronous serial port.

70.   The system of claim 69, wherein the synchronous serial port uses transistor transistor logic.

71.   The system of claim 69, wherein the synchronous serial port uses differential logic.

72.   The system of claim 66, wherein the microprocessor is a reader logic unit.

73. The system of claim 66, wherein the converter is an A/D converter.

74. The system of claim 66, wherein the scanned identification code focusing component further comprises:

a lens focusing component configured to focus the scanned identification code through a lens.

75. The system of claim 66, further comprising:

a reader head assembly displaying component configured to display monitoring data on one or more light emitting diodes on the reader head assembly.

76. The system of claim 66, further comprising:

a reader head assembly receiving component configured to receive instructions from an operator via a set of push buttons on the reader head assembly.

77. The system of claim 66, further comprising:

a reader unit displaying component configured to display monitoring data on one or more light emitting diodes on the reader unit.

78. The system of claim 66, further comprising:

a reader unit receiving component configured to receive instructions from an operator via a set of push buttons on the reader unit.

79.   The system of claim 66, wherein the output port comprises a plurality of ports.

80.   The system of claim 66, wherein the light source is part of the reader head assembly.

81.   The system of claim 66, wherein the light source is part of the reader unit.

82.   The system of claim 66, wherein the microprocessor is a digital signal processor.

83.   A system for reading an identification code from a mailpiece, wherein the identification code is printed in flourescent ink, comprising:

means for generating a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

means for sending the signal from the reader head assembly to a microprocessor in a reader unit over an optical cable;

means for illuminating a light source to scan an identification code from the mailpiece;

means for focusing the scanned identification code at a fiber bundle including a plurality of bundle sections;

means for transmitting the scanned identification code via the fiber bundle to a set of photo sensors at a light filter unit, wherein the transmitting component further comprises:

means for filtering a first fiber bundle section through a first light filter in a first photo sensor at the light filter unit;

means for filtering a second fiber bundle section through a second light filter in a second photo sensor at the light filter unit; and

means for filtering a third fiber bundle section through a third light filter in a third photo sensor at the light filter unit;

means for multiplexing an output signal from the set of photo sensors to a signal converter that converts the output signal to a digital signal;

means for digital signal transmitting the digital signal from the signal converter to the microprocessor;

means for processing the digital signal at the microprocessor to obtain the identification code; and

means for outputting the identification code from the microprocessor to an output port.

84.   A computer usable medium having computer readable code embodied therein for reading an identification code from a mailpiece, wherein the identification code is printed in flourescent ink, the computer readable code comprising:

a generating module configured to generate a signal in response to the mailpiece being placed in front of an infrared receiver at a reader head assembly;

a signal sending module configured to send the signal from the reader head assembly to a microprocessor in a reader unit over an optical cable;

an illuminating module configured to illuminate a light source to scan an identification code from the mailpiece;

a scanned identification code focusing module configured to focus the scanned identification code at a fiber bundle including a plurality of bundle sections;

a scanned identification code transmitting module configured to transmit the scanned identification code via the fiber bundle to a set of photo sensors at a light filter unit, wherein the transmitting module further comprises:

a first filtering module configured to filter a first fiber bundle section through a first light filter in a first photo sensor at the light filter unit;

a second filtering module configured to filter a second fiber bundle section through a second light filter in a second photo sensor at the light filter unit; and

a third filtering module configured to filter a third fiber bundle section through a third light filter in a third photo sensor at the light filter unit;

a multiplexing module configured to multiplex an output signal from the set of photo sensors to a signal converter that converts the output signal to a digital signal;

a digital signal transmitting module configured to transmit the digital signal from the signal converter to the microprocessor;

a processing module configured to process the digital signal at the microprocessor to obtain the identification code; and

an outputting module configured to output the identification code from the microprocessor to an output port.

85. A mail processing system for processing a mailpiece, comprising:

a mail processing device;

a two-part identification code reader connected to the mail processing device; and

sorter application software for communicating between the mail processing device and an identification code server.

86. The system of claim 85, wherein the mail processing device is a Mail Processing Bar Code Sorter.

87. The system of claim 85, wherein the mail processing device is a Delivery Bar Code Sorter.

88. The system of claim 85, wherein the mail processing device is a Carrier Sequence Bar Code Sorter.

89. The system of claim 85, wherein the mail processing device is an Output Subsystem/Bar Code Sorter.

90. The system of claim 85, wherein the identification code reader is a RBCS ID Tag Reader.

91. The system of claim 85, wherein the identification code reader is a Universal ID Tag Reader.

92. The system of claim 85, wherein the identification code server is a PICS server.

93. The system of claim 85, wherein the identification code server is a SICS server.

94. A method for processing a mailpiece by a mail processing device, comprising the steps of:

reading an identification code from the mailpiece, using a two-part identification code reader;

transmitting the identification code to an identification code server, via sorter application software; and

processing mailpiece information between the mail processing device and the identification code server, via the sorter application software.

95.   The method of claim 94, wherein the mail processing device is a Mail Processing Bar Code Sorter.

96.   The method of claim 94, wherein the mail processing device is a Delivery Bar Code Sorter.

97.   The method of claim 94, wherein the mail processing device is a Carrier Sequence Bar Code Sorter.

98.   The method of claim 94, wherein the mail processing device is an Output Subsystem/Bar Code Sorter.

99.   The system of claim 94, wherein the identification code reader is a RBCS ID Tag Reader.

100.   The method of claim 94, wherein the identification code reader is a Universal ID Tag Reader.

101.   The method of claim 94, wherein the identification code server is a PICS server.

102.   The method of claim 94, wherein the identification code server is a SICS server.

103.   A system for processing a mailpiece by a mail processing device, comprising:

        a reading component configured to read an identification code from the mailpiece, using a two-part identification code reader;

        a transmitting component configured to transmit the identification code to an identification code server, via sorter application software; and

        a processing component configured to process mailpiece information between the mail processing device and the identification code server, via the sorter application software.

104.   The system of claim 103, wherein the mail processing device is a Mail Processing Bar Code Sorter.

105.   The system of claim 103, wherein the mail processing device is a Delivery Bar Code Sorter.

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106. The system of claim 103, wherein the mail processing device is a Carrier Sequence Bar Code Sorter.

107. The system of claim 103, wherein the mail processing device is an Output Subsystem/Bar Code Sorter.

108. The system of claim 103, wherein the identification code reader is a RBCS ID Tag Reader.

109. The system of claim 103, wherein the identification code reader is a Universal ID Tag Reader.

110. The system of claim 103, wherein the identification code server is a PICS server.

111. The system of claim 103, wherein the identification code server is a SICS server.

112. A system for processing a mailpiece by a mail processing device, comprising:

means for reading an identification code from the mailpiece, using a two-part identification code reader;

means for transmitting the identification code to an identification code server, via sorter application software; and

means for processing mailpiece information between the mail processing device and the identification code server, via the sorter application software.

113.   A computer usable medium having computer readable code embodied therein for processing a mailpiece by a mail processing device, the computer readable code comprising:

a reading module configured to read an identification code from the mailpiece, using a two-part identification code reader;

a transmitting module configured to transmit the identification code to an identification code server, via sorter application software; and

a processing module configured to process mailpiece information between the mail processing device and the identification code server, via the sorter application software.